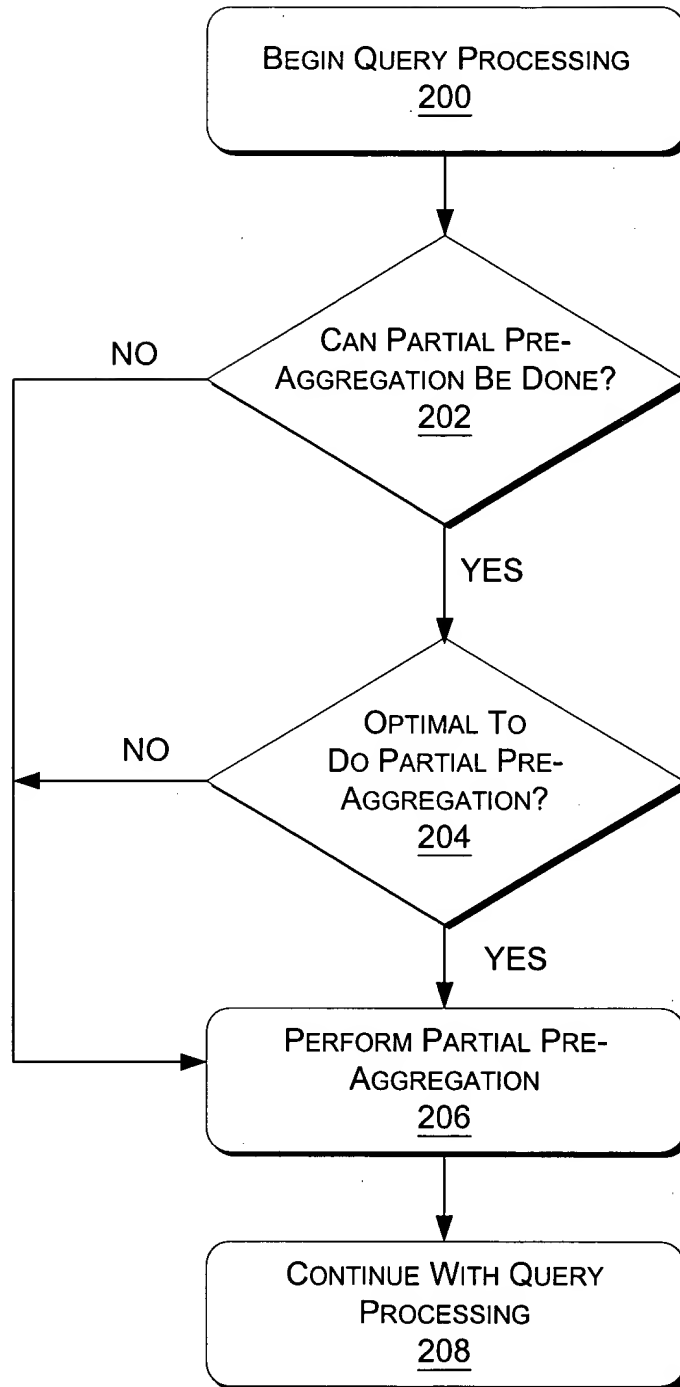
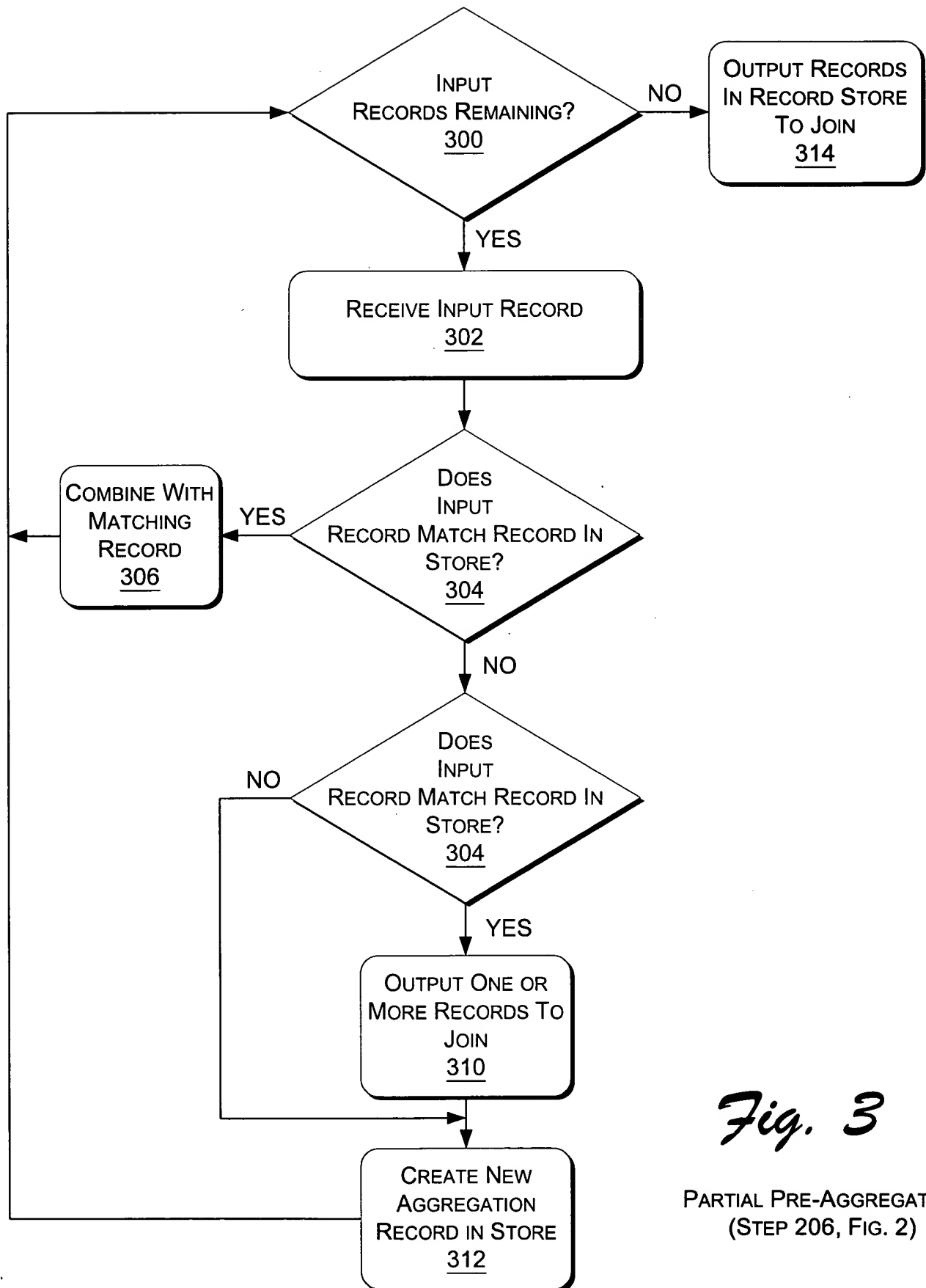


Fig. 1



*Fig. 2*



*Fig. 3*

PARTIAL PRE-AGGREGATION  
(STEP 206, FIG. 2)

|             | Customer<br>Number | Invoice<br>Date | Due Date | Invoice<br>Amount |     |
|-------------|--------------------|-----------------|----------|-------------------|-----|
| Record<br>1 | 9810               |                 |          | \$100             | 402 |
| Record<br>2 | 9815               |                 |          | \$200             | 404 |
| Record<br>3 | 9810               |                 |          | \$300             | 406 |
| Record<br>4 | 9821               |                 |          | \$400             | 408 |
| Record<br>5 | 9810               |                 |          | \$500             | 410 |
| Record<br>6 | 9821               |                 |          | \$600             | 412 |
|             | 414                | 416             | 418      | 420               |     |

Sales Table  
(Customer Invoices)

*Fig. 4*

|             | Customer<br>Number | Customer<br>Name | Customer<br>Contact | Contact<br>Phone |     |
|-------------|--------------------|------------------|---------------------|------------------|-----|
| Record<br>1 | 9810               |                  | Adams               | 123-4567         | 502 |
| Record<br>2 | 9815               |                  | Bethard             | 345-6789         | 504 |
| Record<br>3 | 9819               |                  | Gill                | 987-6543         | 506 |
| Record<br>4 | 9821               |                  | Danner              | 765-4321         | 508 |
|             | 510                | 512              | 514                 | 516              |     |

Customer Table  
(Customer Contacts/Country)

*Fig. 5*



|             | Customer<br>Number | Customer<br>Contact | Contact<br>Phone | Total<br>Sales |
|-------------|--------------------|---------------------|------------------|----------------|
| Record<br>1 | 9810               | Adams               | 123-4567         | \$400          |
| Record<br>2 | 9815               | Bethard             | 345-6789         | \$200          |
| Record<br>3 | 9821               | Danner              | 987-6543         | \$1000         |
| Record<br>4 | 9810               | Adams               | 123-4567         | \$500          |

## Join Results

*Fig. 7*

|          | Customer Number | Customer Contact | Contact Phone | Total Sales |
|----------|-----------------|------------------|---------------|-------------|
| Record 1 | 9810            | Adams            | 123-4567      | \$900       |
| Record 2 | 9815            | Bethard          | 345-6789      | \$200       |
| Record 3 | 9821            | Danner           | 987-6543      | \$1000      |

## Aggregation Results

Fig. 8



